

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/562,732 (Attorney Docket Q92536)

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A process for the production of lupin extracts from lupins, comprising:
 - (a) extracting lupin meal or flour with water at alkaline pH;
 - (b) separating an alkali soluble lupin protein containing component from an alkali insoluble fibrous component; and
 - (c) adjusting the pH of the protein component with acid to a pH between 3-5.0 to precipitate a food grade lupin protein extract (PF1), from an acid soluble lupin protein containing component, ~~collecting said precipitated food grade lupin protein extract (PF1), and~~
 - (d) ~~recovering a lupin protein isolate (PF2), from said acid soluble lupin protein containing component, followed by dehydrating the acid soluble lupin protein component to give a third food grade lupin protein fraction (PF3)~~

wherein said lupin meal or flour has not been treated with an organic solvent to remove or strip fat or oil from said meal or flour.
2. (Currently Amended) A process according to ~~claim 1~~claims 1, 30 or 31, wherein lupin meal or flour is mixed with water at a ratio of lupin flour or meal to water of 1:2-10 on a w/w basis.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/562,732 (Attorney Docket Q92536)

3. (Original) A process according to claim 2 wherein lupin meal or flour is mixed with water at a ratio of lupin flour or meal to water of 1:4-8 on a w/w basis.

4. (Currently Amended) A process according to ~~claim 1~~claims 1, 30 or 31, wherein said lupin meal or flour is extracted with water at an alkaline pH of from about pH 7-pH 9.

5. (Cancelled).

6. (Canceled).

7. (Currently Amended) A process according to ~~claim 1~~wherein theclaim 33, wherein said acid soluble lupin protein component of step (d) is dehydrated by precipitation with a C₁-C₆ food grade organic solvent and thesaid precipitated lupin protein extract (PF3) recovered.

8. (Currently Amended) A process according to ~~claim 1~~wherein theclaim 33, wherein said acid soluble lupin protein component of step (d) is dehydrated by evaporation, distillation or filtration.

9. (Cancelled).

10. (Previously Presented) A process according to claim 7 wherein said food grade organic solvent is selected from ethanol and propanol.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/562,732 (Attorney Docket Q92536)

11. (Cancelled).

12. (Canceled).

13. (Currently Amended) A process according to ~~claim 1~~claims 1, 30 or 31 which produces lupin protein extracts ~~and isolate~~ having an ~~off white~~off-white colour and ~~neutral taste~~neutral taste.

14. (Currently Amended) A process according to ~~claim 1~~claims 1, 30 or 31 for the production of a food grade lupin protein extract.

15. (Currently Amended) A food product containing a lupin protein extract produced according to the process of ~~claim 1~~claims 1, 30 or 31.

16. (Original) A food product according to claim 15 wherein said lupin protein is a replacement for dairy, egg, soy or meat protein in the food product.

17. (Currently Amended) A nutritional supplement containing a lupin protein extract produced according to the process of ~~claim 1~~claims 1, 30 or 31.

18. (Original) A nutritional supplement according to claim 17 containing lupin protein extract PF1, PF2 or PF3.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/562,732 (Attorney Docket Q92536)

19. (Currently Amended) A paper coating composition containing a lupin protein extract produced according to the process of ~~claim 1~~claims 1, 30 or 31.

20. (Original) A paper coating according to claim 19 wherein said lupin protein extract is selected from PF1, PF2 and PF3.

21. (Currently Amended) A feed ingredient containing a lupin protein extract produced according to the process of ~~claim 1~~claims 1, 30 or 31.

22. (Original) A feed ingredient according to claim 21 wherein said lupin protein extract is selected from PF1, PF2 and PF3.

23. (Currently Amended) A food product containing a lupin protein ~~isolate-extract~~ produced according to the process of ~~claim 1~~claims 1, 30 or 31.

24. (Currently Amended) A food product according to ~~claim 19~~claim 23 wherein said lupin protein ~~isolate-extract~~ is a replacement for dairy, egg, soy or meat protein in said food product.

25. (Currently Amended) A process according to ~~claim 1~~claims 1, 30 or 31 wherein said alkali insoluble fibrous component is recovered.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/562,732 (Attorney Docket Q92536)

26. (Currently Amended) A process according to ~~claim 1~~claims 1, 30 or 31 wherein said alkali insoluble fibrous component is washed in water and subsequently treated with acid and/or one or more enzymes to produce galactose.

27. (Currently Amended) A process for the production of lupin fibre extracts from lupins, comprising:

- (a) extracting lupin meal or flour with water at alkaline pH;
- (b) separating an alkali soluble lupin protein containing component from an alkali insoluble fibrous component; and
- (c) mixing ~~the~~said fibrous component with water at pH 1-3, heating for 1-5 hours at a temperature of 60°C-80°C, and thereafter separating an insoluble precipitate (FF1) from a hydrocolloid (SHF1).

28. (Currently Amended) A product containing a lupin fibre extract produced according to the process of claim 27, wherein ~~the~~said product is SHF1 or FF1.

29. (Previously Presented) A process according to claim 25 wherein said alkali insoluble fibrous component is washed in water and subsequently treated with acid and/or one or more enzymes to produce galactose.

30. (New) A process according to claim 1 wherein the pH of said protein component is adjusted to between 3.5 to 4.5 to precipitate said food grade lupin protein extract (PF1).

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/562,732 (Attorney Docket Q92536)

31. (New) A process for the production of lupin extracts from lupin, comprising:
 - (a) extracting lupin meal or flour with water at alkaline pH;
 - (b) separating an alkali soluble lupin protein containing component from an alkali insoluble fibrous component;
 - (c) adjusting the pH of said protein component with acid to a pH between 3-5.0 to precipitate a food grade lupin protein extract (PF1), from an acid soluble lupin protein containing component.
 - (d) raising the pH of said acid soluble lupin protein component to pH 5-7 to form a protein precipitate, and recovering said precipitate to form a lupin protein extract (PF2);

wherein said lupin meal or flour has not been treated with an organic solvent to remove or strip fat or oil from said meal or flour.

32. (New) A process according to claim 31 wherein the pH of said acid soluble lupin protein component is raised to 5.7 to 6.3 to form said protein precipitate.

33. (New) A process for the production of lupin extracts from lupins, comprising:
 - (a) extracting lupin meal or flour with water at alkaline pH;
 - (b) separating an alkali soluble lupin protein containing component from an alkali insoluble fibrous component;
 - (c) adjusting the pH of said protein component with acid to a pH between 3-5.0 to precipitate a food grade lupin protein extract (PF1), from an acid soluble lupin protein containing component;

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/562,732 (Attorney Docket Q92536)

(d) raising the pH of said acid soluble lupin protein component to pH 5-7 to form a protein precipitate, followed by dehydrating said soluble lupin protein component to give a third food grade lupin protein extract (PF3), wherein said lupin meal or flour has not been treated with an organic solvent to remove or strip fat or oil from said meal or flour.